MINERALOGIC AND PETROGRAPHIC OBSERVATIONS (1953).

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The present paper deals with some mineralogic and petrographic observations which the author deemed of interest to describe briefly.

Gypsum in the basalt of Badacsony-Tördemic. In these basalt mines partly quite compact basalt fragments could be found. This compact rock becomes gradually porous, the small holes being partly filled up with xenomorphous gypsum plates. In one of the pieces the gypsum encircles a quartz inclusion.

In another basalt fragment of Tördemic a *pyrrhotite* inclusion two cm in diameter was found. The pyrrhotite is quite the same as that described by Sztrókay observed by him in basalt of Gulács.

The basalt stone-quarry of *Hajagoshegy* of Diszel furnished a zeolite so far unknown in Hungary. On the wall of a vesicle cavity about 6 cm in diameter small, badly developed calcite crystals were deposited, on which *gmelinite,* 1—1.5 cm in size, could be found deposited as white cluster aggregates. The size of the individual gmelinite crystals is 2—3 mm, however, they are not very well developed rather only forming lense shaped discs which in turn produce the cluster aggregates. All crystallographic and optic properties of the substance correspond to those of gmelinite of which still another smaller fragment was also found. The gmelinite contains inclusions of aragonite needles.

Still another peculiar mineral was collected in the basalt of the stone-quarry of Hajagos. The wall of a vesicle cavity the diameter of which was 7 cm covered with calcite crystals 2—3 mm in size forming incompletely developed strawberry aggregates. Between the calcite spider-weblike white threads could be found clinging to the wall of the cavity. It could be established that they cannot be dissolved in hydrocloric acid, their refraction and birefringence is weak and that they have a fiber structure in which the fibers are perpendicular to the longitudinal direction of the threads. Further details could not be observed.

At the present the basalt mine of *Uzsa* furnished large masses of zeolites. Particularly great amounts of phillipsite and natrolite were present, but scolecite could also be observed in fairly large quantities.

The wall of some of the vesicles are covered with a lining of phillipsite, on the phillipsite fibrous thomsonite and on that small puffs of natrolite were deposited. So far thomsonite had not been found in this basalt, its crystallographic and optical properties could be precisely established.

Some of the minerals found in the mine of Uzsa could not be exactly determined. For instance, a very porous fragment of basalt resembling coke the branching cavities of which were filled up with a white mass consisting of aggregates of extremely fine needles which were anisotrope and had an inclined extinction. In the basalt caves of Uzsa a white gellike isotropous substance occurs fairly frequently showing a weak refraction; occasionally natrolite needles are embedded in it.

Recently further basalt barings were made to the west of Uzsa. In the basalt prospect exploitation of *Szebike* vesicle cavities 5—10 mm in diameter occur they are not infrequently completely filled up with zeolites. The most frequent occurrence is phillipsite on which natrolite may be deposited, the two kinds of zeolithe occur also separately. The latest separation was calcite. Natrolite and phillipsite also occur in the cavity of the basalt of *Sümegprága.*

Recently in the rocks of the basalt mines of Sümeg white globules 1—3 mm in size closely strewn consisting of an aggregate of small particles with a fairly strong birefringence (about 1.550) were found.

Between *Tátika* and *Bazsi* rolling masses of basalt are not infrequent their vesicles being at the most 1 cm in diameter the cavities are filled up with thomsonite fiber bundles.

The small cavities of basalt of *Bercehát* lying to the west of Tátika are also filled up with phillipsite.

In the abundant basalt mines of *Prágacsehi* the vesicle cavities are lined with fairly well developed phillipsite crystals on which natrolite and sometimes calcite are deposited. These two zeolite minerals can also be found on *Mount Hermántó.*

In the vesicle cavities, one cm in size, of the basalt of *Haláp* thomsonite could be detected on which in some places natrolite needles were deposited. The latter are frequently provided with a mezolite cap.

The very porous basalt of the *Kopaszhegy* lying to the east of Diszel is exploited in large masses and used for filtering. Needle shaped crystals of aragonite occur in extremely large amounts in the spongelike vesicle of the basalt. In the basalt of Kopaszhegy an inclusion occurred which is certainly an archaic formation. The inclusion consist mainly of round, brown, augite granules two mm in size associated with round granate granules one mm in size. The two minerals are embedded in a dark, coarsely fibrous, aggregate in which single small feldspar granules can be seen.

So far, in the basalts of Apátihegy, Bondoró, Agártető and Kabhegy no zeolite was found.

On the *Sulyomtető* in the vicinity of Nagybátony, Kriván found a few peculiar andesite samples. The wall of the fissures of the andesite is coated with a thin layer of calcite in which very tiny analcime crystals are embedded. In one of the fissures, among the rusty calcite crystals, heulandite crystals $120 \times 40\ \mu$ in size developed.

On prospecting for oil boring No. 6. of *Demjén,* between 83,30—85.40 m, in the fissures of the riolite breccia analcime crystals, clear as water and microscopic in size, were discovered.

In the basalt mine of *Kisbénahegy* of Csoma in the vicinity of Fülek, Jugovics collected interesting white inclusions 1—2 cm in size of varying composition.

There are inclusions which consist exclusively of acidic plagioclas granules. The plagioclas also occurs as larger fresh crystals 1.5 cm in size which are closely twin-grooved, their extinction is almost parallel. Other inclusions consist exclusively of sanidine, however, aggregates composed of a mixture of sanidine and quartz or sanidine plagioclas and quartz, respectively, are more frequent. In such an aggregate a mixture of quartz, sanidine anorthoclas and acidic plagioclas could be detected, the feldspar is stained dark by extremely fine, needle shaped inclusions.

In one of the rock caves small greenish round aggregates can be seen which are formed by green and brown thick columns and thin rods of augite mixed with sanidine crystals. Quartz inclusions two cm in size are also frequent. The aragonite occurs in the cavities as fine needles. A black turmaline inclusion could also be detected.

A light coloured yellow, inclusion about 1.5 cm in size in which gleaming needles and slightly thicker columns could be detected was particularly interesting. Under the microscope the columns are clear as water, translucent, but are stained by very fine black rod shaped inclusions. The cross-section of the columns is hexagonal, their optical character negative and their birefringence average. The fine black rod shaped inclusions occur in a triangle, or are arranged in a longitudinal section in a lengthwise direction perpendicularly to it. At the borders of the columns the inclusions are very close getting always rarer towards the interior. As mentioned above the hexagonal black needles and columns are composed of turmaline. These are embedded in a light coloured mass which is essentially a mixture of quartz and an indistinguishable earthy substance.